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Dakhleh Oasis in Predynastic and Early Dynastic Times :

Bashendi B and the Sheikh Muftah Cultural Units

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Introduction

The cultural correlation between Dakhleh Oasis and the Nile Valley in Predynastic and Early Dynastic times is now more secure, with the acquisition of several new radiocarbon dates and the recent preparation of a synthesis on the Prehistoric pottery from the Oasis. In Dakhleh, the relevant cultural units are *Bashendi B* and the *Sheikh Muftah*. In this paper, published information for both units on site location and artifact assemblages, collected during the survey phase of the Dakhleh Oasis Project, will be briefly summarized. Next, the new relative and absolute dating evidence linking Dakhleh to the sequence in the Nile Valley will be reviewed. Then we examine new information gathered through more intensive survey and excavation, much of it bearing on settlement and subsistence. Finally, Dakhleh adaptive patterns will be considered in light of the evidence for a deteriorating environment in the Eastern Sahara.

THE DAKHLEH MID-HOLOCENE CULTURAL UNITS DEFINED

a : The Bashendi B cultural unit

The Bashendi and Sheikh Muftah cultural units were initially defined on the basis of some 130 localities, most of them purely surface scatters, recorded during the Dakhleh Oasis Project's (DOP) survey phase (McDonald 1999). Subsequently the Bashendi was divided into two subunits based of differences in artifact assemblages, site location, and a suite of some 50 radiocarbon dates (McDonald 1990, 1991).

The later of the two, Bashendi B, shares with Bashendi A a predominantly flake-based chipped stone industry and such tools as bifacial arrowheads and larger knife - or foliate-shaped bifaces (fig. 1). Bashendi B arrowheads are well-made, but less varied in size and shape than those of phase A, and the distinctive hollow based arrowhead is found only in Bashendi A (cf. fig. 1d-h and McDonald 1991 : fig. 3a-i). Other Bashendi B tools include tranchets or planes, scrapers on side-blow flakes, lunates and scaled pieces on quartz. The rich ground stone industry includes small polished axes or celts, small palettes in ironstone or limestone, flat bipointed pierced items thought to be toggles, and beads carved in amazonite, carnelian and limestone. Pierced shell pendants, bracelets of conch shell, and fragments of Nile oyster are found as well. Pottery, mostly small sherds, occurs on many Bashendi B sites (Hope 2002). Usually tempered with fine quartz and shale, walls are thin (ca. 3.5 – 7 mm), and often self-slipped and compacted. Exteriors are brown or reddish, and occasionally black-topped. Decoration is rare and usually confined to shallow oblique lines or rim notching. The only shapes detected are deep open or slightly restricted bowls.

Some 20 Bashendi B sites have been recorded within and beyond the oasis (McDonald 1999 : fig. 7.2). Many are located in the intensely explored Southeastern Basin, far beyond the present oasis. There they occur around the edge of the basin, above the level of the playa silts. Others are located downslope towards the oasis Central Lowlands, where they are associated with tabular sand sheets (Kleindienst et al. 1999). Yet others are found in large basins atop the Plateau to the north of Dakhleh. Unlike Bashendi A sites with their stone-built structures (McDonald & Walker 1999), Bashendi B localities are open-air sites consisting of clusters of hearth mounds and associated cultural debris.

b : The Sheikh Muftah unit

Sheikh Muftah sites differ substantially from those of Bashendi B in assemblages and site locations. Dating evidence suggests that the Sheikh Muftah may have spanned some 1500 years, and it is subdivided into an early or transitional phase, and a later phase.

Chipped stone assemblages (fig. 1j-n) feature, in addition to the grey nodular chert and quartzite found on earlier sites, an imported fine-grained golden brown tabular chert that is frequently burned or heat treated to a deep wine colour. This is fashioned into piercers, scrapers and denticulates in a variety of shapes, some of them quite large (fig. 1n ; McDonald 1982 : fig. 5, 8). Arrowheads are relatively rare, most being bifacially retouched tanged points which are often winged or serrated. Transverse arrowheads – isoceles triangles and trapezes – occur on one site, Locality (Loc.) 136 (fig. 1l, m). The industry is otherwise fairly impoverished, with knives, side-blow flakes and sickle elements rare to absent.

Ceramics are far more common on Sheikh Muftah than on Bashendi B sites (Hope 2002). In later Sheikh Muftah ceramics, the dominant fabric is a coarser version of the Bashendi quartz and shale-tempered fabric. Colour ranges from red to grey, often with firing clouds and sometimes with rim blackening (fig. 1o). Decoration is rare but walls often bear oblique rilling or striations. Walls are thicker than in Bashendi times, and the most common shape is an open to slightly restricted bowl with convex walls, rounded or pointed base, and direct rims.

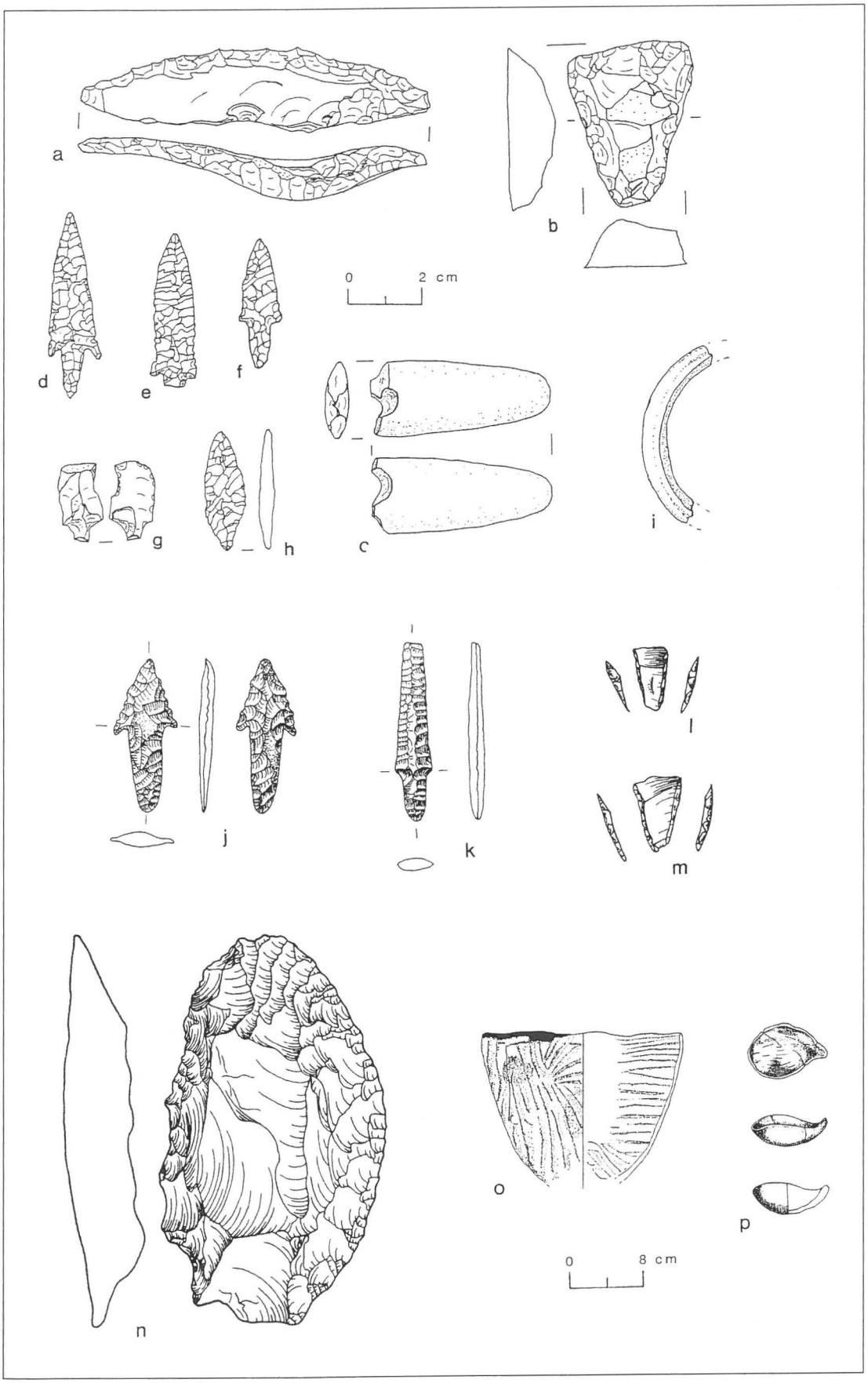

Fig. 1

Artifacts from Bashendi B (a-i) and Sheikh Muftah (j-p).

a, side blow flake; b, tranchet ; c, toggle fragment ; i, shell bracelet fragment ; d-h, j, k, tanged arrowheads ; l, m, transverse arrowheads ; n, scraper-denticulate in tabular chert ; o, open bowl, blackened rim band ; p, ceramic spoon. Items j-m drawn by I. Teubner ; o and p from Edwards & Hope 1987.

Note : o & p are at a different scale from rest of the figure.

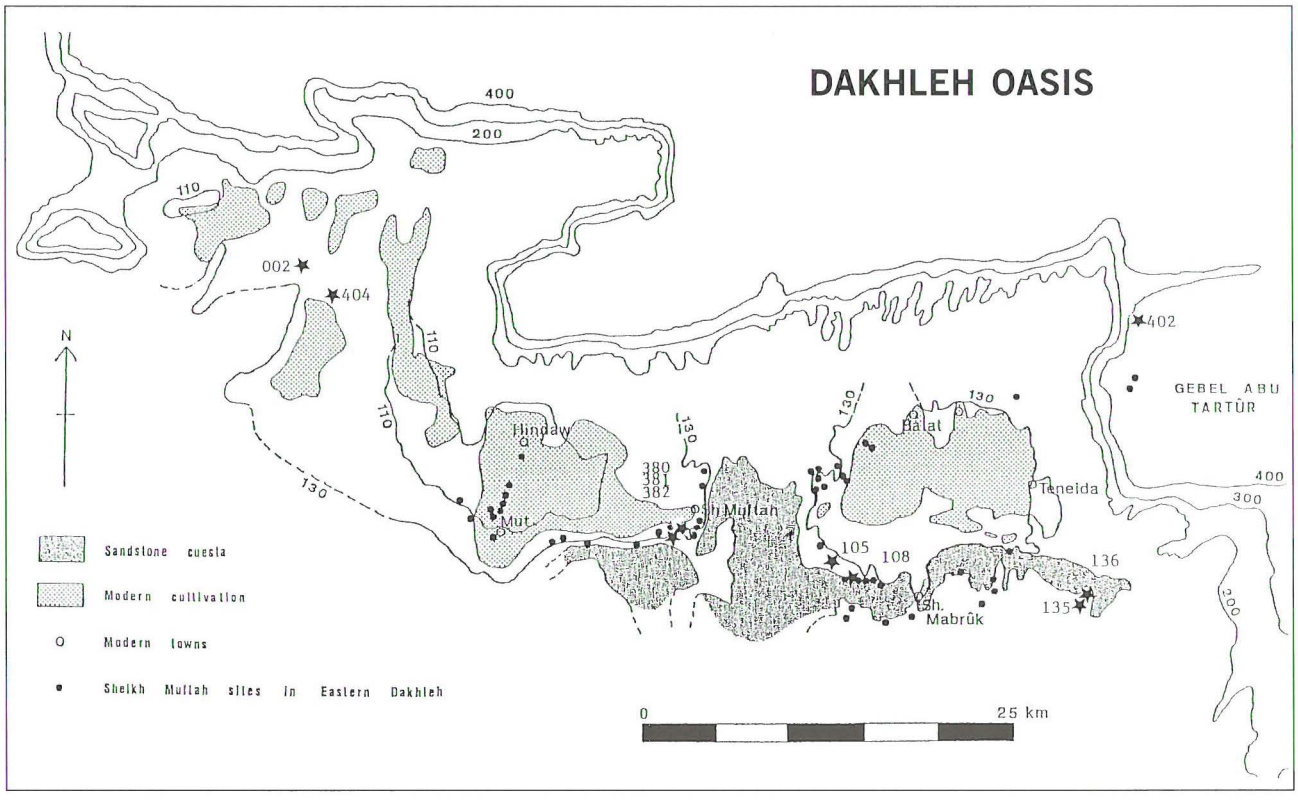

Fig. 2

Map of Dakhleh Oasis showing Sheikh Muftah unit sites. Localities mentioned in text marked by stars.

Other artifact categories on Sheikh Muftah sites include grinding stones, worked bone (both categories relatively rare), ground or polished stone and copper. Ground stone items include small palettes, a disc macehead in diorite, a grooved spheroid, and ax fragments. Stone beads are rare, but carnelian beads were found on two sites. About 25 pieces of copper (small rods, wire, and various flat fragments [McDonald 1983 : fig. 1]) and two pieces of malachite have been recovered from 15 sites.

Some 70 Sheikh Muftah sites have been recorded, most of them in the intensively surveyed eastern half of the oasis (fig. 2). Sheikh Muftah localities are found downslope from most Bashendi sites, often close to the margins of modern cultivation (McDonald 1999 : 124, fig. 7.3). Beyond Dakhleh we recorded three small Sheikh Muftah localities, apparent way stations, two atop the plateau to the east, the other (Loc. 244) in a rock shelter 25 km south of the oasis.

CORRELATIONS WITH THE SEQUENCE IN THE NILE VALLEY

The Bashendi and Sheikh Muftah units can be correlated with Predynastic and early Dynastic Egypt on the basis of suites of radiocarbon dates, and certain artifacts, many of them ceramic vessels, either imported from or shared with the Nile Valley (fig. 3).

a : Absolute dating evidence

Bashendi A and B are fairly securely dated on the basis of 49 published radiocarbon dates (McDonald 2001 : table 3.1) plus six new dates. These dates, converted into calibrated dates BC (using a conversion table in Hassan 2000, plus some laboratory-supplied calibrated readings), yield a range of ca. 6420

to 5700 BC for Bashendi A, and 5400 (or perhaps 5650 from two new dates) to 3950 BC for Bashendi B. In Fig. 3, these Bashendi date ranges are compared with those for Predynastic cultures as published by Hassan (1985) and Midant-Reynes (2000 : chart 3)

The absolute dating of the Sheikh Muftah culture is much less secure. Only two acceptable radiocarbon dates have been published (McDonald 2001 : 35, table 3.1), and recently, we obtained two new dates. These four dates, calibrated, range from 3800 to 2900 BC. We know, moreover, that the Sheikh Muftah survived a further several centuries, as we find their artifacts stratified in Dakhleh with Old Kingdom material of the 5th/6th Dynasties.

Fig. 3

Correlations between Dakhleh Oasis mid-Holocene cultural units and the sequence in the Egyptian Nile Valley, based on relative dating (see table 1) and radiocarbon dates. Predynastic sequences after Midant-Reynes 2000 : Chart 3.

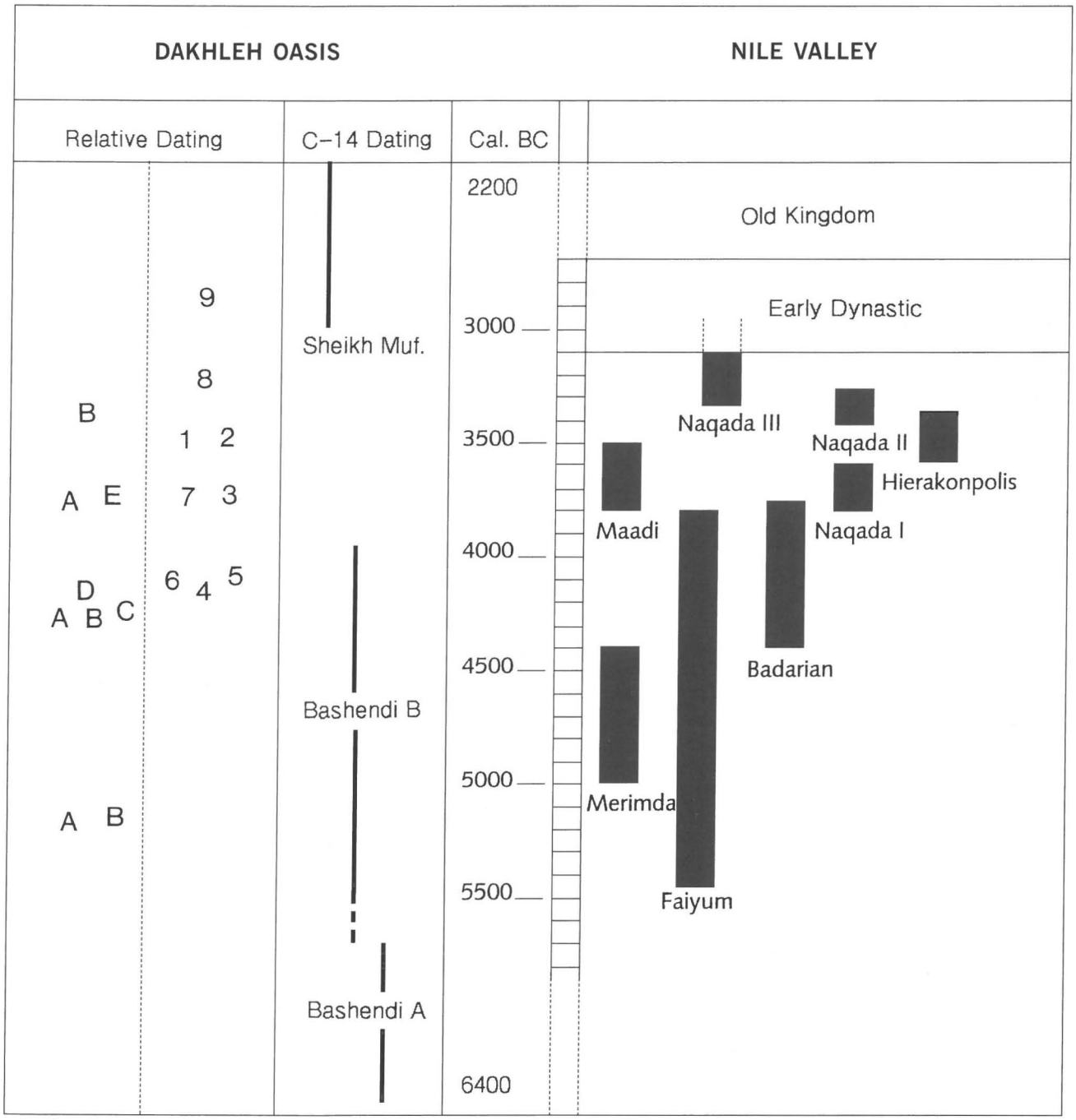

Table 1
ARTIFACTS SHARED BY DAKHLEH OASIS MID-HOLOCENE CULTURAL UNITS AND PREDYNASTIC CULTURES :

Bashendi A
A : Concave based arrowheads subtype « straight-sided elongate triangular shape » (Holmes 1989, fig. A.11f, 7.17c) : cf. Fayum, Badarian, Naqada I (Holmes 1989 : 163, 248).

Bashendi B
B : Side blow flakes : cf. Fayum (Kozlowski & Ginter 1989 : 165, Caton-Thompson & Gardner 1934 : 21 & fig. XLIVx [surf.]). Badarian (Brunton & Caton-Thompson 1928 : pl. XLVII, lot 3284). Naqada II grave (Baumgartel 1960 : 42).
C : Shell bangles, marine shells, stone beads : cf. Badarian (Midant-Reynes 2000 : 155, Holmes 1989 : 14).
D : Black-topped vessels, rim notching : cf. Badarian (Hope 2002).
E : Small short-necked jar from Loc. 74 : cf. Maadi Type 5a (Hope 2002).

Sheikh Muftah
1. Transverse arrowheads : Late Naq. I-Naq. II (Baumgartel 1960 : 36, Holmes 1989 : 305, 336).
2. Working of tabular chert : cf. Late Naq. I-Naq. II (Holmes 1989 : table 4.3).
3. Disc-shaped maceheads : cf. Naqada I (Midant-Reynes 2000 : 179, Baumgartel 1970 : 479).
4. Copper : Badarian onwards (Midant-Reynes 2000).
5. Black-topped brown wear from Loc. 35, 135 : cf. Badarian (Hope 2002).
6. Loc. 135 ceramic « spoon », fine Nile silt : cf. Badarian (Brunton 1937 : pl. XVIII, 36-71).
7. Small ovoid jar : cf. Naqada I (Hope 2002).
8. Small jar, gypsum and straw temper : cf. Buto (Naq. IIc-d) (Hope 2002).
9. Storage jar from Loc. 69 : cf. Early Dynastic (Hope 2002).

b : Relative dating evidence (Table 1)

Relative dating evidence, in the form of artifacts or traits imported from or shared with the Nile Valley, on the whole supports the radiocarbon chronology (table 1, Fig. 3). For Bashendi B, parallels with the Nile Valley span phases from the Fayum Neolithic through the Middle Predynastic, with the majority falling within the Badarian phase. For the Sheikh Muftah, parallels, most of them ceramic, span Badarian through Early Dynastic times, and attest to connections with Upper Egypt and perhaps the Delta (table 1, fig. 3), as well as with Nubia in A-Group times and locales south and west of Dakhleh in the Sahara (Hope 2002).

RESULTS OF RECENT FIELDWORK

Bashendi and Sheikh Muftah sites in Dakhleh, like Prehistoric sites in the Eastern Sahara in general, are all heavily deflated. Still, through a program of detailed mapping, controlled collection of surface artifacts, and excavation of remaining *in situ* deposits, mostly hearths and pits, we now have a fuller picture of subsistence and settlement patterns for both units.

a : Bashendi B sites

For Bashendi B, we chose two extensive hearth mound fields in the Southeastern Basin (Locs 385 & 276), mapped all features, and on each made controlled surface samples and excavations for artifacts and dating, faunal and botanical samples (McDonald 1990, 2002).
Loc. 385, in a shallow embayment along the north edge of the basin, measures ca. 600 x 400 m. Here we recorded some 150 features including hearth mounds, slab and/or artifact clusters, and a few possible stone-built struc-

tures. Three grids were established across the site, each ca. 500 m², for controlled surface collection and the investigation of features.
Among the features, two types of hearth were tested: actual mounds capped with cobbles or slabs, and fire pits, shallow ovals filled with charcoal and fire cracked rock. Only the latter yielded much charcoal for dating and botanical analysis. Unlike Bashendi A sites, where structures are common (McDonald 1998b : 132ff.), only seven possible hut circles were recorded across all of Loc. 385, and one was excavated. It was a carefully-built structure 3 m across, with a flagstone floor, slab-built ledge, and ring of upright slabs forming the base of the walls (fig. 4).
Besides our work on the three grids of 385, we investigated an anomalous feature, Loc. 271, a flat-topped mound 18 x 15 x 0.6 m, with a rich surface scatter of artifacts and bone (McDonald 1990). Here we mapped and surface-collected 84 m² and excavated 46 m² (fig. 5). The only features on Loc. 271 were the remains of pits containing fire cracked rock, lithics and considerable animal bone, within ashy sand.
Chipped stone collections from Locs 271 and 385 include the usual Bashendi B tools, with many denticulates, scrapers and piercers, and a few arrowheads (McDonald 1990 : table 1, 2002 : table 1). Raw materials include quartz pebbles, worked using the bipolar technique. Amongst other finds are grinding equipment, three ax fragments, toggles, beads of amazonite and limes-

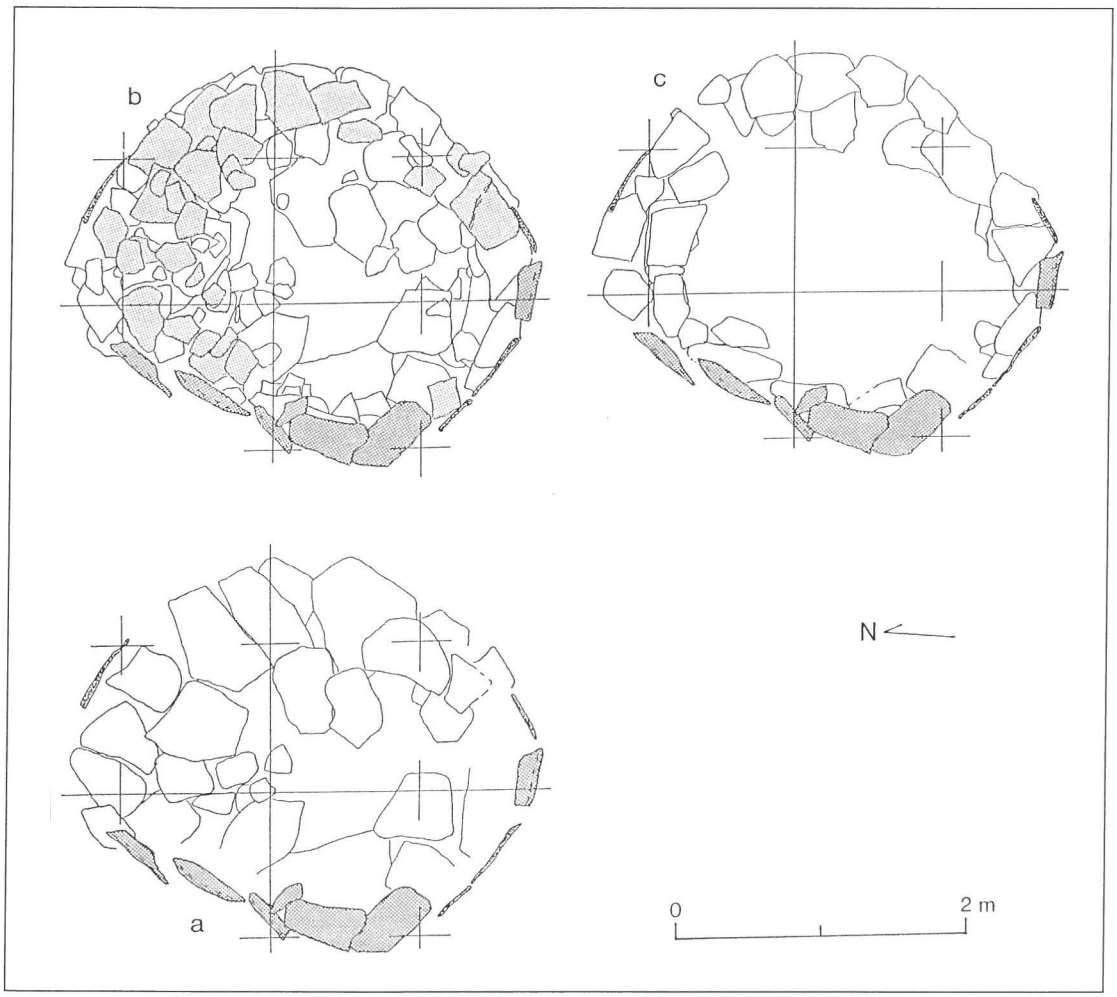

Fig. 4
Locality 385, Feature 29 :
a, slabs of lowest or floor layer ;
b, all layers. Dark shading : verticals still standing ; lighter shading : probable collapsed verticals ;
c, ring formed by horizontal slabs of the middle layers.

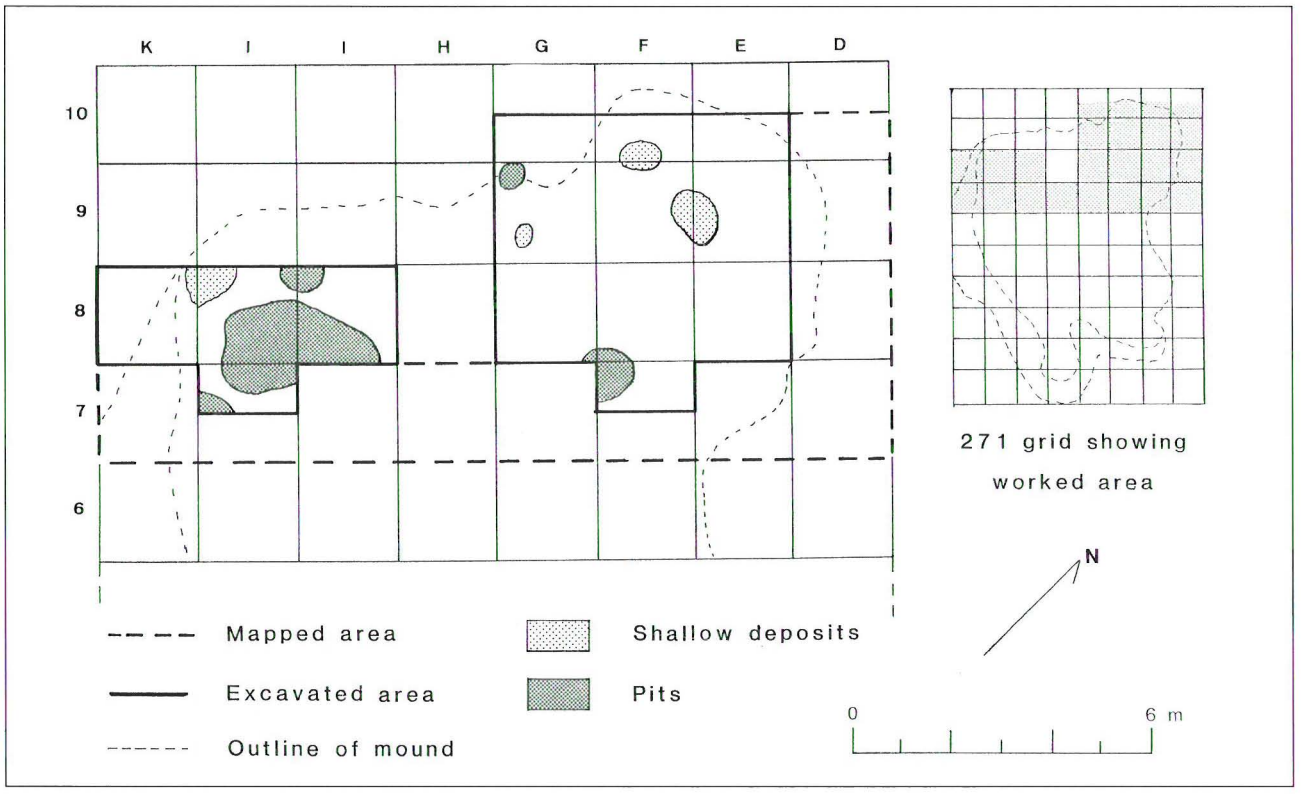

Fig. 5
Locality 271 : area mapped and excavated.

tone, fragments of chrysophase, a bracelet fragment, marine shell pendants, worked Nile oyster shell, three bone points, and sherds from one small vessel. The rich faunal collection from 271, analysed by C. S. Churcher, consists almost entirely of cattle and goat, both apparently domesticated. The cattle include both mature and juvenile animals. Surface collections from other Bashendi B sites include gazelle and hartebeest as well as cattle. Unfortunately, little information is available on plant use. Eighteen soil samples were collected from 271 and 385. However, they contained no plant macrofossils, and charcoal, while abundant, was too fragile for analysis (U. Thanheiser, pers. comm., Feb. 2002).

b : Sheikh Muftah sites

For the Sheikh Muftah, 10 sites were selected for further study, representing the range of site sizes, regions within the oasis, and the 1500-year span of the unit (fig. 2 ; McDonald et al. 2001).

The largest site tested, at 3200 m^2, is Loc. 136, located in the SE corner of the oasis. The site was gridded, mapped, completely surface collected, and 70 m^2 in several areas excavated to sterile soil. *In situ* deposits include hearth mounds, fire pits (sometimes extensive ash patches containing animal bone, sherds and chipped stone), and cultural material stratified within natural wind- or water-laid deposits. In two tested areas, up to six culture-bearing layers were detected, stratified within deposits <1 m deep. Other areas had cultural deposits ca. 40 cm deep, while some were sterile beneath the surface deposits. The hearths and firepits were the only features present. No structures or post molds were found, except for one possible hut circle.

Some 8000 sherds were collected from Loc. 136. The corpus includes both locally made pottery and imports from the Nile Valley, and indicates the site was in use throughout the Sheikh Muftah period from late Bashendi B into Old

Kingdom times. 8500 pieces of chipped stone are under study. The 519 tools include denticulates, points, scrapers, and, as mentioned, transverse arrowheads. Grinding equipment is rare : six small slab fragments and six handstones were noted. Copper is present.
Faunal remains are dominated by domesticated cattle and goats. As many as 8 or 9 head of cattle may be represented, all but one of them old animals. Gazelle, hare, perhaps hartebeest, and part of an ass were found as well. All the bone was very fragmented before discard. Twenty-seven soil samples were collected for botanical analysis, but contained little charcoal, even from the promising-looking dark bands and hearth material.
Loc. 105, in East Central Dakhleh, is another extensive scatter eroding out of what appear to have been marshy deposits near fossil spring vents. Here, 1100 m^2 was mapped and collected and 65 m^2 excavated. The pottery suggests an occupation late in the Sheikh Muftah sequence, but before Old kingdom times. Grindstones are rare. Excavated faunal remains include cattle (one or two old animals), goat, gazelle and hartebeest. As at Loc. 136, little charcoal was recovered.
Other sites tested include Locs 135 and 381, both with fire pits and artifacts suggesting early Sheikh Muftah occupations. At the other end of the time range is Loc. 404, adjacent to and contemporaneous with the Old Kingdom site of Ein el-Gezareen (Mills 2000). Work here revealed extensive firepits but again, no trace of shelters. The fire pits were packed with sherds, half of them Sheikh Muftah, half Old Kingdom products, plus lithics and bone. Cattle, goat and gazelle were present. A few plant macrofossils were recovered including clover-type seeds, but no trace of cultivated plants.

ADAPTIVE PATTERNS IN DAKHLEH DURING BASHENDI B AND SHEIKH MUFTAH TIMES

Palaeoclimatic and cultural evidence indicates that, after a relatively humid period in the early- and mid-Holocene, the Western Desert of Egypt was becoming increasingly dry after ca. 5000 BC, until modern levels of hyperaridity were reached ca. 3000 BC (e.g. Hassan 1988 : fig. 2, Hassan et al. 2001). After ca. 4300 BC, the number of dated sites from the desert drops off (McDonald 1998a : fig. 3) and by ca. 3200 BC, oases and wells that had been occupied for over four millennia were completely deserted (Hassan et al. 2001 : 43, Wendorf et al. 2001 : 664 and passim). In Dakhleh, the largest oasis in the Western Desert, occupation continued into Old Kingdom times, but adaptive patterns were very different from those along the Nile.
The unstable deteriorating environment was affecting human adaptation in Dakhleh well before 5000 BC. Early in the sixth millennium, before the appearance of the Neolithic even in the Fayum Oasis, Dakhleh witnessed a period of increased sedentism and economic intensification in Late Bashendi A times, epitomized by Loc. 270 with 200 slab structures, and Loc. 269, a stone ring 48 x 35 m (McDonald 1998b, in press). These groups harvested wild sorghum and *may* have been herding goats and cattle.
A century or so later, this somewhat sedentary adaptation had disappeared. Bashendi B groups appear to have been nomadic pastoralists. The hearth mound fields seem to be open campsites. Stone-built structures, as on

Loc. 385, are so rare as to suggest special-purpose buildings rather than dwellings. Even the few small ceramic vessels are consistent with the picture of a mobile adaptation. The heavy emphasis on cattle and goats attest to the importance of herding, as do perhaps the several types of scrapers including side blow flakes and tranchets. Gazelle and hartebeest remains plus the arrowheads show that hunting continued. While there are no plant macrofossils, the grinding equipment and perhaps the denticulated blades suggest plant processing.
As to social organization, the ornaments in exotic stone and shell might qualify as « prestige items » suggesting emerging socioeconomic inequality (e.g. Hayden 1998, McDonald in press). Indeed many of these same items have been associated with « mobile elites » amongst early pastoralist societies elsewhere in the Sahara (MacDonald, K. 1998). Of course Bashendi B is not confined just to Dakhleh Oasis. Sites are recorded atop the Plateau to the north, and similar assemblages have been reported in Farafra, Nabta Playa, and in the desert between oases (Hassan et al. 2001 : 39, Wendorf et al. 2001 : 664ff., McDonald 2001). Finally, the traits shared with the Nile Valley (table 1) may attest to the role played by desert pastoralists in the early phases of the Predynastic.
Sheikh Muftah groups, facing increasing aridity, adapted rather differently than their Bashendi predecessors. They appear to be full-time residents of the oasis, but there is no evidence for large groups or for permanent, long-term settlements. Further, while they were in contact with the Nile Valley at least into Early Dynastic times, there is little indication that they participated in the growing prosperity and social complexity of Predynastic and later Egypt.
All recorded Sheikh Muftah localities appear to be temporary campsites. Even the large Loc. 136 with its long history of use, has no evidence of shelters or storage facilities that would suggest permanent full-time occupation. All known sites are found close to water sources, whether spring vents or apparent wetlands.
As for the economy, the faunal evidence suggests herding and limited hunting. Cattle, to judge by the maturity of most specimens, were kept not primarily for meat, but perhaps for milk, blood and/or transportation. Hunters seem to have focused upon a limited range of game, principally gazelle and hartebeest. The maximal fragmentation of bones suggests that animal parts were exploited for all possible nutrients. As for plant food, there is no solid evidence for cultivation. Plant processing tools – grinding equipment, hoes, knives and sickles, are rare to absent, and the sparse palaeobotanical evidence includes no cultigens.
The impression from settlement and subsistence evidence of a somewhat difficult existence is reinforced by the sparse skeletal evidence. Portions of six individuals were recovered from two oasis locations (Thompson & Madden 2000). The remains show evidence of malnutrition in enamel hypoplasia and porotic hyperostosis (a sign of anemia), heavy workloads, and early death. Further, the lack of noticeable burial monuments or of elaborate grave goods reinforces the picture of small, egalitarian groups. Clearly, Dakhleh continued to sustain a human population long after the rest of the Eastern Sahara was abandoned due to increasing aridity. Still, it appears that it was only when Old Kingdom colonists introduced irrigation and the cultivation practices developed in the Nile Valley that the oasis was finally able to support a large, settled population. ■

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